



Australian Government

PMBPREP304 Set a die

Release: 1

PMBPREP304 Set a die

Modification History

Release 1. Supersedes and is equivalent to PMBPREP304C Set a die

Application

This unit of competency covers the skills and knowledge required to remove, refit and set simple dies as used in injection moulding, blow moulding and similar processes.

This unit of competency is typically performed by experienced operators or those in similar roles who are required to select dies, tools and parts required for the die changeover, plan and make the changeover, set the machine conditions and check and fine tune settings to meet specifications.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members, team leader and supervisor, as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Preparation

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | |
|---------------------------------|--|
| 1 Prepare to change dies | 1.1 Determine when changeover will be required, and plan requirements for die change |
| | 1.2 Obtain dies and/or cores and all parts and tools to match the production order |
| | 1.3 Follow procedure for machine close-down and for informing relevant personnel |

- 1.4 Take last-off samples as required for die reports
 - 1.5 Close down machine in accordance with procedures
 - 1.6 Prepare machine for changeover in accordance with procedures
- 2 **Change dies**
- 2.1 Plan removal process to ensure no damage to self, equipment or others
 - 2.2 Remove, clean and store die according to workplace procedures applying corrosion protection if required
 - 2.3 Attach replacement die ensuring that locating devices and marks are matched and securing devices are installed and tightened to specification
- 3 **Set dies**
- 3.1 Set machine conditions for new die
 - 3.2 Restart machine according to procedure
 - 3.3 Dry cycle machine and die according to enterprise procedures
 - 3.4 Check operation of die against product quality specifications
 - 3.5 Check the first-off sample for compliance with required standards
 - 3.6 Fine tune settings and other production variables as required
 - 3.7 Note any equipment variances between actual production and documented set-up conditions
 - 3.8 Complete workplace documentation and report to appropriate personnel
- 4 **Anticipate die setting problems**
- 4.1 Identify potential problems which may occur during the die changing and setting process
 - 4.2 Determine possible causes of these problems

- 4.3 Identify most likely causes and prioritise appropriate actions
- 4.4 Rectify problems using appropriate solutions within area of responsibility
- 4.5 Recommend improvements in systems or procedures

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used.

Applicable legislation, regulations, standards and codes of practice include:

- health, safety and environmental (HSE) legislation, regulations and codes of practice relevant to the workplace, manual handling and hazardous materials
- Australian/international standards relevant to the materials being used and products being made
- any relevant licence and certification requirements.

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and such requirements the legislative requirements take precedence.

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or any combination of:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Simple die

For the purposes of this Training Package a simple die is a two-plate die used to give the required shape to the product and used under pressure to produce simple, straight drawn items. It includes any ejection system operating in the mould open axis.

The following are not considered simple dies:

- dies which are not subject to pressure (these are referred to as moulds in this Training Package)
- two- or three-plate dies with one or more product forming components which move in a direction other than the mould open axis, and which are driven by the mould rather than external actuation
- moulds with molten material retained within the mould between cycles.

Setting

Setting machine conditions for the replacement die must be relevant to the type of equipment/process being used and includes one or more of:

- mould height on the machine
- clamp force
- mould safety system
- ejector system
- mould opening and closing distances, speeds and forces
- injection unit.

These settings may be performed automatically by using an electronic storage device to load settings from a previous run of the product or may be performed by manually setting controls individually.

Tools and equipment

Tools and equipment include one or more of:

- hand carts and trolleys
- hoists/lifting equipment not requiring any special permits or licences
- basic hand tools
- relevant personal protective equipment (PPE).

Hazards

Hazards must be identified and controlled. Identifying hazards requires consideration of:

- weight, shape, volume of materials to be handled
- hazardous products and materials
- hot surfaces
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- heat, smoke, dust, vapours or other atmospheric hazards
- electricity
- gas
- gases and liquids under pressure
- structural hazards
- equipment failures
- machinery, equipment and product mass
- other hazards that might arise

Non-routine problems

Non-routine problems must be resolved by applying operational knowledge to develop new solutions, either individually or in collaboration with relevant experts, to:

- determine problems needing action
- determine possible fault causes
- develop solutions to problems which do not have a known solution
- follow through items initiated until final resolution has occurred
- report problems outside area of responsibility to designated person.

Non-routine problems are unexpected problems or variations of previous problems and include one or more of:

- corrosion of die surface and/or cooling channels
- poor alignment of die
- movement during production
- faulty components
- machine malfunction
- variation in product.

Operational knowledge includes one or more of:

- procedures
- training
- technical information such as journals, engineering specifications
- remembered experience
- relevant knowledge obtained from appropriate people.

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090>